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#### How to cite:

Alevizou, Panagiota; Conole, Grainne; Culver, Juliette and Galley, Rebecca (2010). Ritual performances and collective intelligence: theoretical frameworks for analysing activity patterns in Cloudworks. In: 7th International Conference in Networked Learning, 3-5 May 2010, Aalborg, Denmark.

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Version: Version of Record

Link(s) to article on publisher's website:

<http://www.lancs.ac.uk/fss/organisations/netlc/past/nlc2010/abstracts/PDFs/Alevizou.pdf>

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# ***Ritual performances and collective intelligence: theoretical frameworks for analysing emerging activity patterns in Cloudworks***

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## **Abstract**

This paper provides an overview of emerging activity patterns on Cloudworks, a specialised site for sharing and debating ideas as well as resources on teaching, learning and scholarship in education. It provides an overview of activities such as 'flash debates', 'blended workshops' and 'open reviews' and seeks to situate dialogic interchanges and structures of involvement within the following theoretical frameworks: a) Goffman's notions of 'face-work' and 'ritual performance'; and b) and secondly, notions of collective intelligence. The paper argues that these perspectives can offer a unique contribution to the study and analysis of sociality (Bouman et al, 2007) bounded in the context of technologically mediated networked learning, with wider implications for understanding matters of participation, self-representation, reflection and expansion in education.

## **Keywords**

Networked sociality, web 2.0, collective intelligence, ritual performance, activity patterns

## **Introduction**

It has been argued that processes of participatory culture (Jenkins, 2006, Bruns, 2008), afforded by Web 2.0 technologies and tools are beginning to blur the boundaries between creative production and consumption, and to open novel, public spaces for, and styles of, networked learning; social spaces that promote 'communities of enquiry', collaborative knowledge building, and shared assets (e.g. interests, goals, contents, ideas, see Alexander, 2008 Anderson, 2007; Downes, 2005; Siemens, 2009). Yet, despite mounting literature on the affordances of technology to support such practices, research on their applications for supporting teaching and learning in higher education contexts is slowly emerging.

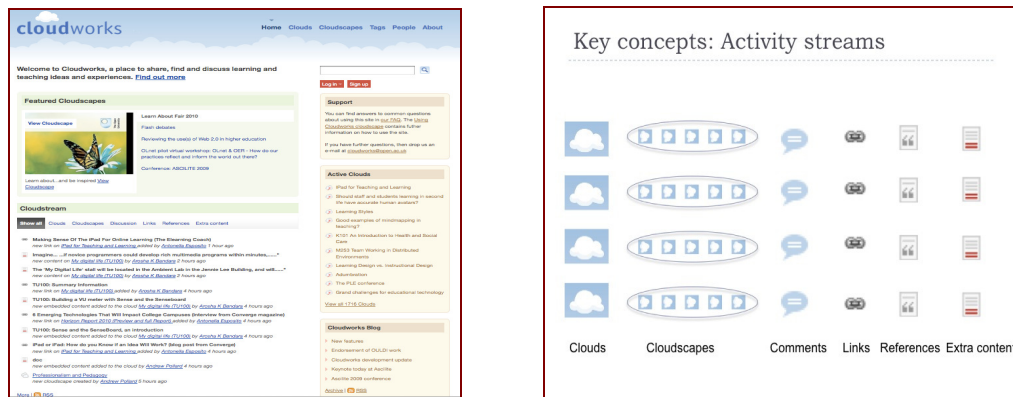
This paper explores these concepts in the context of analysis of emergent patterns of behaviour and activity in a new social networking site for education, Cloudworks, which is a specialised networking site for aggregating and sharing resources and debating ideas on teaching and learning. It begins with an overview of the site and the initial theoretical underpinnings that formed its *design*, and then briefly describes the activity patterns we are seeing emerge as use of the site evolves. We argue that these patterns of behaviour require further theorising to locate the site in current socio-cultural thinking. We conclude by suggesting that analysis of innovative web 2.0-based tools in an educational context can yield new insights into the future of networked learning.

Our initial theoretical perspectives on which the development of Cloudworks was based, focussed around Engeström's (2005) notion of 'social objects' in social networking and Bouman et al's (2007) framework for 'sociality'. In this paper we introduce two additional frameworks and demonstrate how they are helping us with our preliminary analyses of emerging activities on the site and in particular the insights they provide into the dialogic interchanges and structures of involvement within the site. The first framework is Goffman's (1955; 1963) notions of 'face-work' and 'ritual performance'. The second is the notion of collective intelligence (Lévy, 1997; 2001; Jenkins, 2006). For the purpose of this paper, we review particular case studies within three of the many emerging patterns of activity in Cloudworks: namely 'flash debates'; 'event backchannels'; 'open reviews'. We argue that these perspectives are useful into studying networked sociality bounded in the context of learning, with wider implications for the matters of participation, self-representation, and openness in a higher education context. We contextualise the examples we offer with a brief discussion of the methodological frameworks that can aim to deploy for supporting the further study of interaction, socialisation and sharing within Cloudworks specifically and research in networked learning in general. We conclude with the implications that such analyses may have for education establishments and networked learning cultures.

## Cloudworks overview

Cloudworks (<http://cloudworks.ac.uk>) has been developed as part of the Open University Learning Design Initiative (<http://ouldi.open.ac.uk>). It is a social networking site that aims to harness web 2.0 practices to provide a space for those in education to share, discuss and find learning and teaching ideas and designs. The site combines practices of socialisation, sharing and co-creation common in social networking sites, wikis and social media, with different forms of dialogue, debate and peer commenting. Across popular sites such as Facebook, blogs and folksonomies, Flickr, YouTube, Twitter and Slideshare we saw evidence of aggregation of knowledge and indicators of 'belonging' through the identification of 'friends' and the idea of 'following'. We adopted an agile approach to development, through a series of design phases. Each design phase has consisted of a series of design decisions, observation of activity patterns and subsequent evaluation (Conole and Culver, 2009a).

Conole and Culver (2009b) discuss the theoretical underpinnings deployed in the design of the site (alpha version was released in Summer 2008) pointing to dimensions of object-oriented sociality (Knorr-Cetian, 2001; Engestrom, 2005; Bouman et al, 2007). There are two key concepts associated with Cloudworks. The first is that the core objects in the site are clouds. These can be anything to do with learning and teaching (a description of a teaching session, a design visualisation, a case study, a description of relevant learning and teaching tools or resources a question or problem). Clouds can be social, so it is possible to have a discussion and commentary and they can be cumulatively and collectively improved (following an agile approach to redesign of the site, in summer 2009 users can embed additional multimodal content, add links or references, or additional tags). Clouds can be grouped into clusters of interest, called Cloudscapes. These might be around a particular event such as a workshop or conference, or a community of interest such as a course team or student cohort or around a topic such as a research theme or project. Therefore, fundamental to the design approach to Cloudworks were two dimensions: Firstly, the site is made up of a range of 'social objects' concerned with shared, emerging and/or problematic educational practices; these range from learning designs to tools and resources associated with design processes, but also learning activities, debates on e-learning as well as networked and open pedagogies. Secondly, Cloudworks is designed to apply Web 2.0 principles to encourage sharing of objects and distribution of activities, so it achieves critical mass and is self-sustaining through end-user engagement and contributions.



**Image 1: A. Cloudworks homepage featuring streamed and evolving activity (most active clouds on the right, featured cloudscapes on the top and live feed on the bottom); B. Activity streams in detail**

As of mid-February 2010, the site contains 1,850 registered users, ca. 40,000 unique visitors from 158 countries. While the site has evolved beyond learning design-oriented sociality, its inter-connectivity with other channels of web 2.0 communication (such as Twitter, blogs) has pushed the dimensions of serendipity, surprise and association to further self-oriented as well as collective dimensions of engagement. At the same time, as more design interventions sought to complement blended communicative practices in residential events, such as workshops, seminars and conferences, more patterns of activity have emerged pointing to self-actualisation through archiving of personal reflection. The table below summarises the patterns of activity pointing to types of uses as they evolved over time and through the added functionalities.

Core types of activity	Evolutionary trajectories in use/activity
Events (supported and serendipitous) <ul style="list-style-type: none"> <li>o Workshops</li> <li>o Conferences</li> <li>o Virtual seminars</li> </ul>	<ul style="list-style-type: none"> <li>o Increased number of requests to Cloudworks team for setting up pre-designed spaces for spaces (summer 2009) for events</li> <li>o A richer record of events in relation to a) embedding papers &amp; presentations; b) audience responses and dialogic interchanges (back-channels)</li> <li>o Increased number of users setting up ad-hoc spaces as back-channels (Autumn 2009)</li> </ul>
Audience/interest group targeted cloudscapes for specific research idea/project or teaching topics & pedagogies	A raised activity regarding users outside the Cloudworks team setting up Cloudscapes (60.2%) (Aggregation of topics with more followers; increased personalisation and projected topic-oriented sociality) (Autumn 2009)
Topic/Question oriented sociality	<ul style="list-style-type: none"> <li>o Essentially dialogic in nature – clouds or cloudscapes which raised questions and issues and provided a shared space for users to discuss. A new pattern of activity sparking ‘flash debates’ is evident from Summer 2009.</li> <li>o Provocative questions and polling style activities – often transferred from the blogs and twitter – generate rich and immediate discussions</li> <li>o An aggregator, a record and focal point of discussions in a public space</li> </ul>
‘Open Research Reviews’	More evidence researchers posing their research questions and aggregating relevant resources, but also inviting others to contribute and discuss (Autumn, 2009)

**Table 1: Core patterns of activity and evolutionary trajectories**

## Theoretical perspectives: from objects to situations

Having provided a brief description of the evolution of the site, this section describes some of the additional theoretical frameworks we are exploring to enable us to further analyse the patterns of evident behaviour on the site as a public space for performance of self and socialisation around shared interests. As outlined above we have deployed sociocultural perspective, drawing on ideas of mediation and activity theory for designing object oriented sociality (see Conole and Culver (2009b); Bouman et al, 2007; Engeström, 2005). Drawing on Wegner (1998) Bouman et al. (2007: 14) argue that “a designer needs to create the mechanisms that allow users to tap into the collective wisdom and experience and use it for the own benefit, learning processes and actualisation”. Part of the realms of building identity and self-actualisation, the principles of information brokering and participation, feedback and association are proposed as core components in the design of sociality. While we adopted this approach to develop the mediating artefacts that structure the interface of the site, Goffman’s notions ‘facework’ and ‘ritual performance’ (used to analyse behaviour in public spaces) are useful for exploring the nature of conversational interaction, the networks of feedback and the sharing of guided exploration – important design parameters for Bouman et al. and Engeström – and evident in behavioural patterns and dialogic interchanges on the site. Essentially these notions capture and complement exploration of core *processes* of cultural and semiotic mediation (cf. Hasan, 2005) as participants encounter each other in this particular public space. Also part of identity building and self-actualisation is an emphasis on connectivity, and the trajectory collective and social needs is proposed. The idea of collective wisdom or collective intelligence is therefore further discussed to connect patterns of interaction and situated learning practices around shared goals and intersecting discourses. The next two sections introduce these situated theoretical perspectives and further contextualised through a cursory examination of examples from activities and behaviour.

## Ritual performances

One can argue that the intersections of self-representation with informational affairs in physical and mediated interaction, depicted in Goffman’s televisual insights, are being accentuated in a Web 2.0 world where ‘travel’ between the real and virtual in time and through networks come to structure domains of social life.

Every person lives in a world of social encounters, involving him (sic) either in face-to-face or mediated contact with other participants. In each of these contacts, he tends to act out what is sometimes called a line – that is, a pattern of verbal and nonverbal acts by which he (sic) expresses his view of the situation and through this his evaluation of the participants, especially himself (sic). (Goffman: 1967, p. 5)

Goffman’s contributions to the study of everyday social life, and in particular in the production of the self, the nature of social life, and the frames of experience have been widely deployed in the field of computer mediated communication (CMC) (ranging historically from personal homepages, to blogs and social networking sites (SNS), and organisational studies. In particular Goffman’s self representation, ritual performance in public space and analyses of talk are suitable for exploring interactive and dynamic aspects of communication. Recent studies in SNS that adopt Goffman’s ideas turn attention to the mediating framework of sites such as Facebook and MySpace and the possibilities that it offers for the presentation of the self. Continuing a tradition of CMC that examines the relationship between offline and online social life and the frames that shape and regulate it

recent research has explored how social networking sites have been fast established as prominent arenas where university students can become versed in the 'identity politics' (see Selwyn 2009). Although the question of facework and impression management is linked with identity, this research focuses mostly on the dynamic and strategic aspect of communication, namely sharing information, media artefacts and ideas.

In examining these issues our research can take into account the framing effects of different channels of Web 2.0, and their intersections in the performance of sharing and talk. Goffman extended notions of symbolic interactionism to account for both the role of frames, occasions and associated semiotic codes and the capabilities of individuals to improvise creatively within these structures. This is particularly relevant to the case of web 2.0 environments as part of self-actualisation is located in the ability of users to modify interfaces and the re-enact the affordances of varying interfaces. The notion of frame, more specifically, could be considered as part of the function of mediation. It refers to the rules and conventions that Goffman perceives as part of the organization of experience which helps to define a situation (Goffman, 1974). Participants within Cloudworks come to the site through a range of communicative spaces (Twitter, blogs, institutional sites, public and private mailing lists), and interact in several physical and virtual spaces (e.g. workshops and conferences). While examining the detail of the media ecology that promotes 'traffic' and supports development within the site is beyond the scope of this paper, here we would like to draw attention to possible directions that could analyse the ways in which participants frame their communication based on their perceived audience, contexts of interaction/contribution and the dynamics of specific situations.

As Branaman notes, drama, ritual and game are three dominant metaphors that Goffman used to articulate his views on the nature of social life (1997: 1xiii). Using each metaphor he drew attention to different, often complementary, yet occasionally contradictory, aspects of communication and interaction. The notion of the ritual for instance, was more frequently associated in his work with sustaining the moral order, whereas the notion of the game emphasized the strategic, or manipulative role of interaction. The idea of drama often combined the two since, as Goffman indicated, a successful performance that is being staged as part of a strategic move usually involves acknowledgement and acceptance of the social order (Goffman, 1969). The notion of social life as ritual is particularly relevant for contextualising relations in public spaces, to examine not only community formation within the site, but also the random and serendipitous social routines and practices – territories of the self, supportive interchanges, remedial interchanges, tie-ins, and normal appearances – that can be used to instigate a conversation and maintain coherence (Goffman, 1971 in Branaman: 1997: 1xix).

### Collective intelligence

In his seminal book *Collective Intelligence*, Lévy offers an analysis of Web instruments like hypertext (1998: 155-7) to articulate a theoretical proposal regarding the ways humans can potentially share, collaborate, produce and reproduce knowledge (1998: 215-6). The idea of a digital networked technology, that makes possible a shared or collective intelligence originating from Wells (1938) Bush (1945) and echoes Engelbart's (1962) ideas and early designs on software that would build organisational capacity to 'augment intellect' and enable the sharing mental associations and collective thought around complex problems. Collective intelligence (CI),

[...] is a form of *universally distributed intelligence*, constantly enhanced, coordinated in real time ... The basis and goal of collective intelligence is the mutual recognition and enrichment of individuals rather than the cult of fetishized or hypostatized communities (1997: 13)

While the cognitive perceptions of the members of a knowledge/discourse community taken individually may be incomplete or inaccurate, together they form a trans-active and transitive memory system that shares domains of knowledge. This can restore the level of organicity that defines oral communities. This for Lévy is arguably a 'new humanism' "that incorporates and enlarges the scope of self-knowledge into a form of group knowledge and collective thought" (Lévy 1997: 17). The idea of CI as a social pool for mobilising the sharing of resources, perceptions formal and informal knowledge(s) is also seen as an alternative source to the power of mainstream media, both in terms of interpretation and production. Inspired by Lévy, Jenkins argues that collective intelligence involves 'consumption as a collective process' – a process that involves 'learning to use that power through our day-to-day interactions with convergent culture' (2006: 4). Most importantly CI is part of a new set of critical literacy skills for navigating and participating in digital networked landscapes; 'Participatory culture shifts the focus of literacy from one of individual expression to community involvement. The new literacies almost all involve social skills developed through collaboration and networking', judgment, play, performance. (Jenkins et al., 2007; Jenkins, 2007). The fostering of such skills and competences can enable individuals

operating in different contexts to work together and ‘to solve problems that are more challenging than any of them could master as individuals’ (Jenkins, 2007: np).

This view can be closely aligned with what is known as a *learner generated context*, whereby groups of users collaboratively pool available resources to create an ecology that meets their needs often in relation to the co-configuration, co-creation and co-design of a particular learning space that allows learners to create their own context (e.g. Luckin, 2006; see also Jenkins et al., 2007: 49-53). Such groups ‘are strongly motivated to seek out problems that are sufficiently challenging that they can engage as many members as possible’ (2007: np).

The idea of cultivating fluency and in relation to new forms and spaces of creative representation is a powerful one. For Lévy, collective intelligence can produce a public space that makes possible the representation and dynamic management of knowledge, with the ability to facilitate cognitive transcendence. He uses the *social dispersal of meaning* as a notion that emerges within and makes possible the evolution of ‘cosmopaedia’ a space for the dynamic management and representation of knowledge. Unlike earlier visions of global encyclopaedias or libraries (see Wells, 1938; Bush, 1945; and also Rayward: 1997), ‘cosmopaedia’ is highly dialogical and transgressive of its own boundaries. As ‘universal’ knowledge becomes the sharing between changing individuals (a product of dialogue indeed,), there can be no totality/enclosure possible. This ontological shift to the social notion of knowledge emphasises the *processual* and the expansive, rather than the very idea of ‘possession’. The new modalities of social production of knowledge enabled by the combination of social software, digital media and peer to peer collaboration offers new opportunities for encapsulating not the universal (global) ideal of enlightenment, but the emphasis to the local and the particular relationships mobilised around expansive learning.

## Case Studies

Cloudworks provides a platform for exploring some of the concepts outlined above and to further contribute to the discussion of the ways in which Web 2.0 technologies can mediate social relations enabling new modes of self- and collective- representation, with respect to communication, inquiry and sharing in the context of education. We are currently focusing on three main themes of empirical investigation: a) the dialogic nature and shared discourses evident in social interactions of participants aggregating around a particular activity or a shared goal; b) the ways in which structures of co-operation afforded by technical and social designs shapes trajectories of negotiation and progress, as well as builds networks of trust and self-actualisation; c) the ways in which the coordination of action can foster ad-hoc communities and probe, not only the course of learning experience, but also unmask the tensions and contradictions embedded in specific circumstances within which a problem, question, dilemma or situation was initiated. To address these fields we use a combination of methodologies ranging from virtual ethnography (Hine, 2000) and reflective logs, to interviews and focus groups, sociolinguistic analysis of multimodal discourse (Bakhtin, 1986; Holland et al, 1998; Kress and van Leeuwen, 2001) and evaluation data collected in conferences and workshops. Insights from these will be combined with Google analytics data to design a survey that will be posted to users of site. In this section we draw out examples of practices and quotes that represent the two theoretical perspectives outlined above, deploying data from observation logs.

### Ritual performances and supportive interchanges

Ritual performance is evident in a number of activities within the site. A good example are activities that we have labelled ‘flash debates’ began to appear on the site in September 2009, and are sparked from questions that aim to provoke and a range of comments and activities erupts almost immediately after initial postings. The ‘Is Twitter Killing Blogging?’ Cloud is particularly interesting (<http://cloudworks.ac.uk/index.php/cloud/view/2266>). Set up on the 11<sup>th</sup> September in response to a tweet. The cloud has had 847 views, 49 rich and detailed comments, 20 links and 6 academic references (Feb 2010). A cloud was set up in response to a tweet:

‘Matt has set up a quick survey to ask people how using twitter has impacted on how much they blog or not. The results are really interesting. Matt is planning to do a more reflective blog on this....’

The cloud provides a link to the survey and posed a series of simple questions around the topic. Almost immediately there was significant traffic to the cloud and a rich discussion soon evolved, involving around 16

different participants. The originator of the tweet which sparked off the creation of the cloud, acknowledged the value, whilst also giving an indication that he would follow up with a reflection on his own blog:

'Great idea Gráinne. Now I'll have to write that blog post!'

Cloudworks proved to be a complementary space between the micro-blogging site Twitter (where the debate was sparked off) and individual, personal blogs. It provided a collective space to discuss the issues and aggregate resources. Some participants then went off and wrote their own reflective pieces on the debate elsewhere.

'This is a reworking of a post in Cloudworks on a Twitter vs Blogging debate' 'I guess I should blog this;-)

Interestingly the entire content of this cloud, and the nature of its emergence evokes Goffman's notions of the ritual theatricality relevant for contextualising relations and serendipitous routines and practices, this time travelling across communicative channels and invoking *co-presence* in networking and virtual spaces (an idea that also emerges in the role of Cloudworks as a conference backchannel). In terms of content, the discussion on the self-referential nature of participation and self-representation is mobilised by the tensions between blogging and microblogging; between the idea of broadcasting and sharing as part of digital identity; in essence the 'learning self' is projected in- time and as- time.

'Last week, following my quick poll on blogging & tweeting, Gráinne Conole started an 'Is Twitter killing Blogging?' discussion on Cloudworks.....I've followed the development of Cloudworks for a while now with some scepticism.

However, it's use around the VLE-PLE debate and this blogging-Twitter discussion has really changed my views. I now get it, see a purpose and think it could have a really important role to play as an aggregator, a record and focal point for our discussions.'

Performance in flash debates provides a frame that invites critical reflection on communicative processes both in terms of the 'bounded events' and in relation to interactions and improvised interactions real-life situations. Performance is also dependent on the formal characteristics of the site (combining reflective (micro)blogging with referencing, tagging and networking) or on the degree to which active participants engage in blogging-like activities within the site and present themselves strategically or frame their communication based on the perceived audience and context of interaction to ensure that interactions are successful.

One form of 'dialogic and multimodal exchange' that is framed along the lines of 'supportive interchanges', a form of acknowledging communication and encouragement that originates by the members of the Cloudworks team across numerous occasions ('thanks for the link', 'you are raising an interesting point', 'here is a link to...', 'I have summarised the discussion above', 'thanks to @[name] and @[name] for pointing this out'). Although conflict and playful debate are often present in discussions, the majority of which do not reach – or aim to – reach a clear consensus (see for example – the 'VLE is dead' cloud <http://cloudworks.ac.uk/index.php/cloud/view/2162>) or a debate on the future of universities (<http://cloudworks.ac.uk/cloud/view/2586>), the supportive and remedial interchanges are present by participants, often part of self- and -peer validation; embedded, in the process of sharing and broadcasting experiences and content.

The 'New Pedagogies' (<http://cloudworks.ac.uk/cloud/view/2772>), 10 comments among 5 participants) cloud is illustrative of this perspective. Set up during the 2009 ASCILITE conference as a poll to stimulate debate on regarding the relationship of the affordances of social media and innovative pedagogies. Reflective questioning and experiential comments, and reference to interpretative accounts from the conference were combined with autobiographical or anecdotal remarks, indicate a shift from the subjectivities of the academic, the teacher, the professional, to the anxious parent:

I would suggest that - as Gilly Salmon identifies in her 5-step model - when a teacher or facilitator is introducing a tool or technology that requires new skills - new ways of thinking or working, the introduction and embedding of these tools becomes a crucial part of the teaching and learning process. [...]

'I had a sobering conversation with my 13 year-old son during the Ascilite09 conference... I was telling him about 2nd Life and the presentations I'd seen on it that day, how some university lecturers were building lecture theatres in 2nd life... He (bright student, avid reader, great curiosity and imagination, high academic standards - yes, and extremely proud and biased mum) shook his head slowly and said: "I'm not going to university". And he wasn't joking. So, "new pedagogies" ? What exactly are we up to with elearning "innovation" and where is it headed?

[...] 'If your son is questioning what value new technologies like Second Life might have for his own learning, then you have an interesting and productive conversation on your hands.'



## Collective intelligence

An obvious example of collective intelligence on the site are a number of cloudscares which are acting as ‘open reviews’. One such example, the ‘Reviewing the use(s) of Web 2.0 in Higher Education’ cloudscape was set up on 1<sup>st</sup> October (<http://cloudworks.ac.uk/index.php/cloudscape/view/1895>). Part of a Higher Education Academy project (UK) it aimed at soliciting experiences, commentary and resources, evidence from research and anecdotal accounts on current practices within a teaching/learning or research context. Within its first three active months it generated 33 followers and over 3 had generated over 35 comments in depth discussions, and over 150 links and cross-references in 5 core clouds. The flexible, open nature (and structure) of the review both casual participants and the core team to ‘add’ relevant sections from existing clouds as well as clouds covering discussion on relevant topics, ranging from digital literacy (<http://cloudworks.ac.uk/cloud/view/2669>) to tips and experiences of using particular social media in teaching and learning and for research (e.g. using twitter with students, [<http://cloudworks.ac.uk/index.php/cloud/view/2398>], to wider debates about openness and the future of universities (<http://cloudworks.ac.uk/cloud/view/2586>). Essentially the cloudscape functions as a record, an aggregate and a transitive system that individuals from different – yet often overlapping – communities of practice come to form relational networks and share domains of knowledge, discourse and interpretation surrounding routine and subversive practices, challenges and contradictions:

‘Many UK academics still value theory rather than practice. Writing a long paper about Web 2 is more likely than trying to work out how to link to a video.’

‘Yep agree with you Will to an extent! The medium fosters particularly type of dialogue and engagement. To me its not so much about trying to write academic style papers in web 2.0 environments but harnessing what web 2.0 affordances can offer in terms of broadening/enriching the engagement.’

Several clouds regarding the use of microblogging in higher education for example, are pooled within the Review’s Cloudscape to form a record of processual and dispersal of meaning found in real practices and rehearsed challenges, contextualised with supportive evidence and referential resources.

‘As a mechanism for students to do short-burst reflection at the end of each taught session (Tweflection!).

The idea came from my experience of students finding it difficult to reflect on their learning experiences.’

(Using Twitter with Students)

In the blog post [How we twitter](#) a teacher counts and reflects on a twitter experiment developed in his English class. He provides interesting hints about the pedagogical approach he adopted and a fascinating narrative of how the Twitter use was co-created. (Using Twitter for teaching and learning)

Just started using twitter today for our Web 2.0 and working practices project - see my cloudscares

This modality of the social production of knowledge is both transgressive of its boundaries and illustrative of the ways in which individuals – to draw from Goffman again – socialise across topics and ‘orchestrate’ their identities in dialogically purposeful and supportive ways, contingent on the sociocultural- and historically constructed modes of supportive interaction and ‘crowdsourcing’. Active commentators are often active in posting resources and links – indicating a degree of ownership and belonging, in the ‘dialogical wrapper’ that supports these resources or designs. Although goals are fluid and motivations for participation bound around ideas (rather than specific outcomes or collectively produced ‘products’), collective intelligence as a pool for mobilising various loosely knit groups or autonomous individuals to share resources, perceptions, experiences, formal and anecdotal knowledge is evident throughout various activities that span across related topics enquiring practices in research-led teaching and learning.

## Conclusions

We introduced the paper with the description of how Cloudworks addresses the power of social media in an educational context. The variety of ways in which the site has being used has prompted us to revisit aspects of the networked sociality framework and expand this with two additional theoretical frameworks which would yield rich new analytical insights into understanding inscribed and actual *use*; We aimed to offer examples pointing to the nature participation, the style of communication and the metaphors of engagement. We argue that Cloudworks is a platform for expressive interactions and collective intelligence and we consider the wider implications for both the emerging design trajectories of the site and the outcomes for networked learning through more situated research that will explore in further detail the nature of associations, types of roles and connections, and the guided exploration and boundary crossing among participants.



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